TITLE: *Fra Mauro's Mappamundi*
DATE: *1457 -1459*
AUTHOR: *Fra Mauro*
DESCRIPTION: This large circular planisphere (6 feet 4 inches in diameter), drawn on parchment and mounted on wood in a square frame, is preserved in the Biblioteca Nazionale Marciana, Venice. Unusual for medieval European maps, it is oriented with South at the top (Indian Ocean, top left; Mediterranean, right center) and so meticulously drawn and full of detail and legends that it has been described as a *"medieval cosmography of no small extent, a conspectus of 15th century geographical knowledge cast in medieval form."* Though the coasts are drawn in a style recalling that of the *portolan* [nautical] charts, loxodromes and compass roses are absent, and the effect is definitely that of a *mappamundi*, not a nautical chart. The map was fully described and reproduced on vellum for the first time published by William Frazer in London and Venice, 1804 Manuscript on vellum, BL Add. MS 11267 and by Placido Zurla in *II Mappamondo di Fra Mauro Camaldolese*, 1806 in Venice (also now in the British Library), and later by Santarem in his facsimile Atlas of 1849.

Fra Mauro, a Camaldulian monk from the island of Murano near Venice, was active in about the middle of the 15th century. He seems to have been, to some extent, a "professional cartographer", substantiated by the monastic records that document expenditure on materials and colors for mapping, wages for draftsmen, and so on. The first entry relating to Fra Mauro as a mapmaker dates from 1443, in connection with his map of the district of S'Michele di Lemmo in Istria; and during the years 1448-49 he was known to be at work on a *mappamundi.* However, working from a commission granted by King Alfonso V of Portugal, a patron who supplied money and information on the on-going Portuguese discoveries, Fra Mauro and his assistant, sailor-cartographer Andrea Bianco *(#241),* spent the years 1457 to 1459 constructing the requested world map that was the prototype for the map known today as *Fra Mauro's mappamundi*. The map was completed on 24 April 1459 and dispatched to Portugal, but for some reason has not survived. A commemorative medal which was struck in honor of this event describes Fra Mauro as *"geographus incomparabilis".* He died during the following year while working on a copy destined for the Seignory of Venice; however, Bianco or another of his colleagues produced the now extant second map, which was subsequently discovered in the monastery on Murano, then transferred to the Ducal Palace in Venice.

Fra Mauro's map was in many ways a more up-to-date map than the printed versions of Ptolemy which succeeded it two decades later. Ptolemy's *Geographia* was 'rediscovered' in Western Europe and had been circulating in Latin manuscript form since 1406, coming to Italy fresh from the Byzantine conquests. It is clear from numerous legends on his map that Fra Mauro was very much aware of the great deference then paid to the cosmographical conceptions of Ptolemy, and the likelihood of severe criticism for any map which ignored them. Nevertheless, in general, Mauro stands by contemporary ideas and forestalls criticism by stating the following:

> I do not think it derogatory to Ptolemy if I do not follow his *Cosmografia*, because, to have observed his meridians or parallels or degrees, it would be necessary in respect to the setting out of the known parts of this circumference, to leave out many provinces not mentioned by Ptolemy. But principally in latitude, that is from south to north, he has much 'terra incognita', because in his time it was unknown.



Fra Mauro map outline re-oriented with North at the top

Ptolemy, he writes, like all cosmographers, could not personally verify everything that he entered on his map and with the lapse of time more accurate reports will become available. He claimed for himself to have done his best to establish the truth.

> In my time I have striven to verify the writings by experience, through many years' investigation, and intercourse with persons worthy of credence, who have seen with their own eyes what is faithfully set out above.

Therefore, Mauro did not use Ptolemy's framework of longitude and latitude and he also opened up the *Sea of India*, which in editions of Ptolemy is traditionally landlocked, but was generally left open to the circumfluent ocean by Mauro's contemporaries. Mauro did, however, take account of Ptolemy's geography and travelers' reports concerning the great extent of the East, and as a result, moved Jerusalem away from the position as the world's center, a marked departure from medieval custom to its true position, west of center in the Eurasian continent. This non-conformity clearly worried the friar, and he excuses himself by the following:

> Jerusalem is indeed the center of the inhabited world latitudinally, though longitudinally it is somewhat to the west, but since the western portion is more thickly populated by reason of Europe, therefore Jerusalem is also the center longitudinally if we regard not empty space but the density of population.

Like the Greek geographers before Ptolemy and like the Arab cartographers, Fra Mauro shows all of the continents as being surrounded on all sides by the great ocean. He did not see the earth as simply a disk, the circular form of the map was his way of depicting a sphere. However he had not been able to arrive at an opinion on the overall size of the globe.



Facsimile of the Fra Mauro map oriented with South at the top

> Likewise I have found various opinions regarding this circumference, but it is not possible to verify them. It is said to be 22,500 or 24,000 *miglia* or more, or less according to various considerations and opinions, but they are not of much authenticity, since they have not been tested.

Fra Mauro, therefore, did not have a very accurate conception of exactly what proportion of the earth that he was portraying in his map. By moving its center eastwards, however, he had made the relative longitudinal extents of Europe and Asia approximately correct. Putting the center at Jerusalem had of course resulted in the longitudinal extent of Asia being reduced in relation to that of the Mediterranean: on his

map he represents it as about twice the length of that sea, which is fairly accurate for that latitude.

The orientation of the *mappa mundi* towards the south is perhaps the first aspect that surprises and intrigues the modern spectator who is used to north-oriented maps, and who is therefore disoriented by the effort required to identify landmasses which not only have 500-year-old outlines, but which are also turned "upside down," thus losing their familiar shapes. Most of the diagrammatic manuscript *mappae mundi* of the period 1150-1500 are oriented to the east. But among the maps contemporary with that of Fra Mauro are the 1448 world map of Andreas Walsperger *(#245)*, the so-called *Borgia* world map *(#237)* of the first half of the 15th century, and the *Zeitz mappa mundi (#251)* of the last quarter of that century are all oriented to the South. Thus it is not surprising that, around the mid-15th century, a *mappa mundi* was oriented to the south. Fra Mauro, in fact, did not even think it necessary to address the issue, probably considering it congruent with the wider culture of his readers and patrons. Some explanations also include the influence of the contemporary Islamic cartography, the cosmographical concepts of Aristotle, and, of course, the Venetian maritime commercial focus of Fra Mauro's time of the Indian Ocean and thus towards the south.

AFRICA: Putting aside for the moment questions of interpretation, it is impossible not to be struck by the illusion of accuracy which the general shape of the continent produces here, especially when compared with most of the previous medieval European representations. Africa, in outline, resembles the representations on the *Catalan-Estense* map of 1450-1460 *(#246)* and Pietro Vesconte's world map of 1321 *(#228)*, save the fact that the *Estense* map is almost severed in two by the prolongation of the *Sinus Ethiopicus*. Details of Abyssinian topography have been expanded to cover most of the center and south, except for the southernmost extremity, which is separated by a river or channel, from the mainland and named *Diab.*

By 1459, the year of the map's construction, the Portuguese had sailed some 2,000 miles beyond the Straits of Gibraltar, that is, as far as Rio Grande (i.e., the Jeba River, 12 degrees north, or probably not beyond Sierra Leone - it is disputed whether at that date the Cape Verde Islands had been discovered). Mauro apparently had knowledge of this exploration for he tells us as much in a rubric near the west coast of Africa and adds, circumstantially, that

> . . . everywhere they found the coast not dangerous, with the soundings good, convenient for navigation and with no risk from storms . . . they have framed new charts of these regions and given names to the rivers, bays, capes, and ports. I have many of these charts in my possession . . .

Since very little of the coastline beyond Cape Roxo shows a linear correspondence with the actual coastline, these charts may have been worthless counterfeits, the latest official Portuguese findings having been suppressed even at this early stage of exploration to protect the competitive advantage that such knowledge bestowed. Actually the only contemporary names that Mauro has included are *C. Virde* and *C.Rosso,* immediately north of the great gulf; and the small river in the vicinity may be the Rio Grande. Mauro portrays the sea outside the recently discovered Guinea coast merely as a large gulf, the *Sinus Ethiopicus*, cutting deep into the long coastline. The delineation of this great gulf can scarcely rest on first-hand knowledge possessed by the Portuguese, but rather it probably represents a feature derived from earlier medieval maps and perhaps is the

result of rumors of the actual Gulf of Guinea. According to some accounts, the Portuguese are stated to have reached the meridian of Tunis (10 degrees East) and perhaps even that of Alexandria. Curiously enough, on Fra Mauro's map the eastern end of the gulf may be said to be on the meridian of Tunis, as in fact the eastern terminus of the Gulf of Guinea is. As to the latter speculation, to have crossed the meridian of Alexandria would have entailed rounding the Cape of Good Hope.

The lack of tangible examples displaying the latest information on the map has been criticized, especially as Mauro's assistant, Bianco, was employed in its production, but it is scarcely justifiable to argue from this that information was deliberately withheld from the cartographer by the Portuguese authorities. According to G.R. Crone, the principal cartographers were well informed on the progress of the navigators. However, it has also been pointed out by researchers such as Portuguese scholar Professor A. Cortesão that, in pursuance of their ambition to hold a monopoly of the trade of West Africa, successive kings of Portugal decided on the suppression of all information calculated to excite the interest and jealousy of other powers. This Portuguese colonial policy in the 'conspiracy of silence', as it has been called, reached formality with John II (reigned 1481-1495), using his energies to prevent leakages of the news of discoveries at a time when foreigners were seeking by every means to acquire it. In the reign of his successor, Manuel I, the vigilance of the government was even more intensified, especially after the return of Cabral from India. *"It is impossible to get a chart of the voyage,"* wrote an Italian agent concerning Cabral's expedition, *"because the King has decreed the death penalty for anyone sending one abroad."* It is also said that charts were sometimes only lent to navigators by the Portuguese India House and at the end of a voyage the chart had to be returned to that institution. But even if such a view was prevalent earlier in the 15th century, what could have been the motive or objective of King Alfonso in withholding from Mauro information which would have enhanced the value of his planisphere and substituting for it presumably worthless caricature of charts? In attempting to solve this riddle historian George Kimble states that the chief cartographical need of the Portuguese at this time was not so much a map of the world that would merely portray with precision what they already knew, as a map that would give the opinion of learned geographers on the extent of Africa and on the possibility of a sea-route to the East. Mauro's planisphere fully met this need. At the same time, by its allusions to navigators in the southern seas, the map was calculated to spur on the Portuguese to renewed effort to reach their goal.

It is, however, evident that Fra Mauro's map depicts the coasts of Africa as far as Senegal and Cape Verde, which were explored by the Portuguese expeditions of 1441, as well as giving evidence of that country's penetration as far as the Congo. The coasts charted by Diaz have been fitted into the limiting circular outline of Mauro's world picture, presenting such a marked trend to the southeast that the 'Cape of Good Hope' (?) seems to be positioned due south of the Persian Gulf, whereas it is in reality due south of the Adriatic. More than one student of cartography has shared Alexander von Humbolt's conviction that the southernmost point, called *Cavo de Diab*, is none other than the Cape of Good Hope made known to Mauro by some daring expedition similar to that which Mauro himself speaks of as having taken place in 1420. One of the many legends on his map, near the southern extremity of Africa says:

> About the year of Our Lord 1420 a ship, what is called an Indian junk *[Zoncho de India]*, on a crossing of the Sea of India towards the Isle of Men and Women, was driven by a storm beyond the Cape of Diab, through the Green Isles, out into the

> Sea of Darkness on their way west and southwest, in the direction of Algarve. Nothing but air and water was seen for forty days and by their reckoning they ran 2,000 miles and fortune deserted them. When the stress of the weather had subsided they made the return to the said Cavo de Diab in seventy days and drawing near to the shore to supply their wants the sailors saw the egg of a bird called *roc*, the egg being as big as a seven gallon cask, and the size of the bird is such that from the point of one wing to another was sixty paces and it can quite easily lift an elephant or any other large animal. It does great damage to the inhabitants and is very fast in its flight.

Fra Mauro's *Indian* must be taken to mean 'Arab'. The Arabs had established regular trade connections with places far to the south in East Africa, and it is not unlikely that a vessel may have rounded the Cape of Good Hope and sailed into the Atlantic, which the Arabs had long been calling the *Sea of Darkness.* Elsewhere Mauro says that he had spoken to persons who had been driven forty days beyond the *Cavo de Soffala*. The *roc* is, of course, an allusion to the fabulous bird of the *Arabian Nights*. An interesting point is that 500 years before Fra Mauro's time an Arab chronicler writing about Soffala has a very similar story of a vessel not only being driven by storm but also encountering the *roc*. Fra Mauro, then, was probably drawing ultimately on Arabic sources, and the doubt arises whether any significance should be attached to the date of 1420. There is other evidence of eastern sources in this quarter; for instance the names of the two islands *Negila* [beautiful, Sanskrit] and *Mangula* [fortunate, Arabic].



South Africa, Cape of Diab (oriented with the South at the top)

The large island at the extreme southern end of Africa, named *Diab*, is probably based upon reports of the existence of the great island of Madagascar. There would be no improbability in a vessel being driven down to the latitude of the Cape of Good

Hope, or of Arabs at Soffala having some inkling of the trend of the coast to the south. In fact there are a number of place names on *Diab* that are of Arab origin: *Xegiba* [Zanzibar], *Soffala, Chelue* [Kilwa] and *Maabase* [Mombasa]. It is extremely unlikely, as has been argued, that the *Cape of Diab* is nothing more southerly than Cape Guadafui. But an analysis of most of the features of the hinterland by G. Kimble makes it clear that they do not refer to 'South Africa', for the *Mareb* and *Tagas Rivers* with their affluents *Mana, Lare* and *Abavi,* can be none other than the Abyssinian rivers *Mareb, Takkazye, Menna, Tellare* and *Abbai*; while *flumen Xebi* and *flumen Avasi* are traced with such extraordinary fidelity that they can be readily identified with the *Ghibie* and *Hawash Rivers* of southern *Abyssinia* - a region not thoroughly explored until modern times, but such accuracy could have been the result of information received from an Ethiopian mission to Florence in 1441. The fact that these rivers are the southernmost feature of the map (they are placed at the same latitude as *Cavo de Diab*) makes it almost impossible to believe that Mauro knew anything of Africa south of the equator. How then, says Kimble, are we to interpret *Diab*, the hinterland of the Cape described by the mapmaker as *a very fertile region which was recently conquered by the great King of Abyssinia, ca.1430?* The only region with which it is at all comparable, within the limits imposed by Mauro's apparent knowledge of the interior, is the Somali peninsula. It is significant that in a contemporary document in the Library of S. Michele at Murano we are told that *Diab is a great province in parts of which there is an abundance of very good things, its principal town being called Mogadis,* which can be none other than *Magadoxo* of the Somali coast. *Cavo de Diab*, in that case, becomes *Cape Guardafui,* or *Madagascar* according to R.A. Skelton. Consequently, the degree of verisimilitude possessed by the southern portion of the African coastline is due, in part at least, to the exigencies of the map's circular form and, in extenuation of this, it may be urged that Mauro's purpose throughout seems to have been to harmonize conflicting theories, except of course where they were mutually exclusive. Fra Mauro himself certainly accepted the possibility of circumnavigating southern Africa. On this and other evidence, the discriminating cartographer reached an important conclusion:

> Some authors state of the Sea of India that it is enclosed like a lake, and that the ocean sea does not enter it. But Solinus holds that it is the ocean, and that its southern and southwestern parts are navigable. And I affirm that some ships have sailed and returned by this route.

The detailed knowledge of the northeast African interior extends as far as the river *Zebe* [? Webi Shebeli]. The *Nile* [Blue Nile] is shown rising near a lake, undoubtedly *Lake Tana*, in the *Fountain of Geneth*, a name for the source which was still in use more than three hundred years later. Fra Mauro states that he obtained this information from natives of the country

> . . . who with their own hands had drawn for me all these provinces and cities, rivers and mountains, with their names all of which I have not been able to set down in proper order from lack of space.

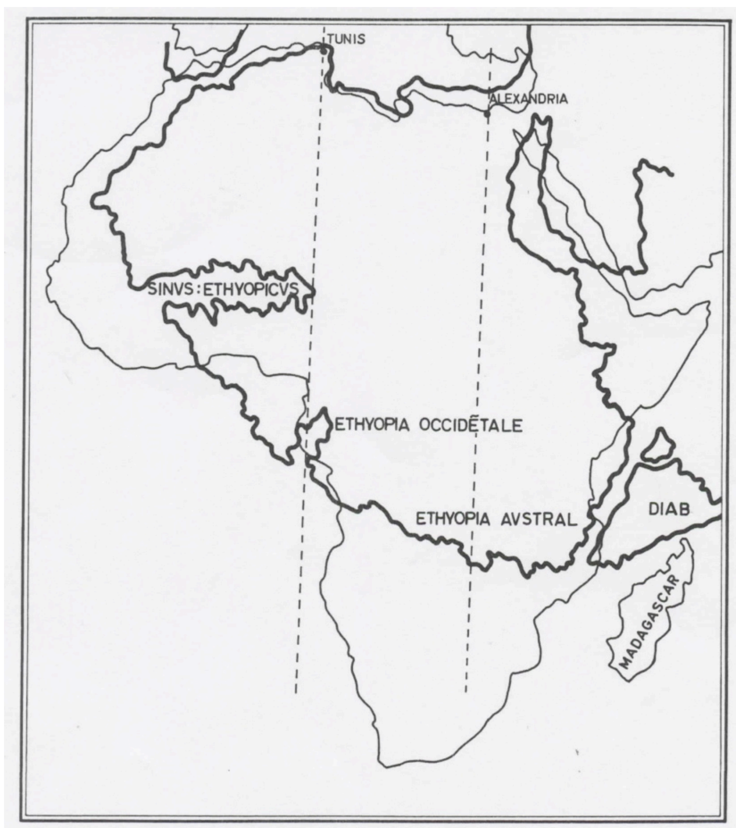
It has been shown that two main causes of the confused representations of northeast Africa are the ignorance of the cartographer about the existence of the eastern Sudan, so that he telescoped Egypt and *Abyssinia* together, and the failure to realize that much of

the hydrographic detail available applied to one river only, the *Abbai*, and not to a number of distinct streams.

The Coptic Church of Abyssinia was in touch with Cairo and Jerusalem, and it was doubtless from emissaries of this Church that Fra Mauro obtained some of his information. Near Lake Tana he has the name *Ciebel gamar*, literally *Mountain of the Moon*. Mr. O.G.S. Crawford suggests that this was the origin of the legend about the source of the Nile, and that it was only later that the site was transferred to the Equator.

The suggestion is partly retained of a 'western Nile' flowing from a great marsh, no doubt Lake Chad; beyond this marsh a river flows westwards to enter the ocean by two branches to the north of Cape Verde, no doubt the Senegal and perhaps the Gambia. Fra Mauro tells us that he was supplied with Portuguese charts and had spoken with those who had navigated in these waters.

The draftsman places the legendary and fabulously wealthy Christian ruler, *Prester John* and his kingdom of *Abassia* at the source of the Nile. *Ethyopia* extends to the west and south coasts of the continent. Thus Mauro weaves Marco Polo's narrative into Arab theory and makes these fit together with the cartographic notions of *Abyssinia* which he had obtained from 'first-hand sources'.



Fra Mauro's Africa super-imposed on a modern map of the continent.

ASIA: Fra Mauro's map was called by Giovanni Battista Ramusio (1485–1557, an Italian geographer and travel writer), who saw the original, *"an improved copy of the one brought from Cathay by Marco Polo"*. Indeed, Fra Mauro's representation of the Far East is derived from Marco Polo. His illuminator has conceived the cities and places of *Cathay*, as

described by Polo, in the architectural styles of the Venetian Renaissance. In spaces between rivers and place-names he drew cities with walls and towers, i.e., *Chambalech* [Beijing], the capital city of *Chataio* or *Cathay* [Northern China]. In a footnote Mauro says that he drew the cities of Asia so large because there was simply more room on the map there than in Europe. According to some critics, having enlarged Asia in relation to Europe, our cosmographer has not put the additional space to very good use. It is, for instance, extremely difficult to comprehend Mauro's representation of southern Asia. From the Persian Gulf eastwards, he appears to have taken the Ptolemaic outline, but exaggerated the principal gulfs and capes, and to this outline he has fitted the contemporary nomenclature. The great *Gulf of Cambay* recalls the similar feature of the 14th century charts, with the addition of the island of *Diu*, an important trading center. It is noticeable here that the order of the names from *Goga* to *Tarna* is reversed, probably an error in compilation due to the unusual orientation of the map. Beyond *Tarna*, India is broken into two very stumpy peninsulas, resulting in the confusion of relative positions in the interior, and in the placing of *C. de Eli* at the same latitude as *C. Chomari* [Cape Comorin]. *Saylam* [Sri Lanka/Ceylon] appears more or less correctly related to *Chomari*, with a note that Ptolemy had confused this island with *Taprobana*, and a representation of *Adam's Peak*.

An inscription appears near *Chambalec* [Beijing], and is very close to Marco Polo's description of the season's hunting undertaken by Kubilai and his court.

> This most excellent and mighty emperor has sixty crowned kings under his dominion. When he travels, he sits in a carriage of gold and ivory decorated with gemstones of inestimable price. And this carriage is drawn by a white elephant. The four most noble kings of his dominions stand one at each corner of this carriage to escort it; and all the others walk ahead, with a large number of armed men both before and behind. And here are all the genteel pleasures and customs of the world.

To the east, there is a more or less recognizable Bay of Bengal, confined on the further side by the great island of Sumatra. Into this bay flows in the north a great river here named *Indus*, the repetition of a mistake which seems to go back at least as far as the *Catalan Atlas of 1375 (#235)*. There is nothing corresponding to the *Golden Chersonesus* or the Malay Peninsula, but to the east again, rather surprisingly, is placed the *Sinus Gangeticus*, with the Ganges entering on the north: that river is therefore brought into close relationship with southern China. A conspicuous feature in the Indian Ocean is the Maldive Islands, shown with their characteristic linear extension. Instead however of running north and south, they extend approximately from northwest to southeast, and this direction is emphasized in an inscription. The position in which the Andaman Islands are shown in relation to Sumatra also suggests that there is a general tilting of the map in this area of about 45° west of north.

In the southeast, close to the border of the map, is an island with the inscription *Isola Colombo, which has abundance of gold and much merchandise, and produces pepper in quantity . . . The people of this island are of diverse faiths, Jews, Mahomedans and idolaters . . .* This refers to the district of *Quilon* (the *Colombo* of the *Catalan Atlas)* south of the Indian peninsula. Arab topographers were accustomed on occasion to refer rather loosely to districts approached by sea as 'islands' *[gezira]* and this often led to confusion, as in the present instance. This error suggests that portions of the map were probably based on written descriptions or sailing directions by Arab merchants or pilots. Fra Mauro, or the

draftsman of his prototype, clearly misunderstood the passage referring to *Colombo*. The notes attached to some of the islands, giving their direction in relation to others, as in the case of the Maldives already quoted, support this probability. Certainly the whole southern outline of the continent as depicted here could scarcely have been taken directly from a chart drawn by a practical navigator.

To the east of the Bay of Bengal is a very large island, *Sumatra [Taprobana over Siometra]*, the first time that name appears unequivocally on a map. To the north of it, and somewhat squeezed together by the limit of the map, are many islands. As Fra Mauro states that in this region lack of space had compelled him to omit many islands, it no doubt also obliged him to alter their orientation drastically. A long legend here gives some illuminating details on the traffic in spices and pepper.

> *Giava minor*, a very fertile island, in which there are eight kingdoms, is surrounded by eight islands in which grow the *'sotil specie'*. And in the said *Giava* grow ginger and other fine spices in great quantities, and all the crop from this and the other [islands] is carried to *Giava Major*, where it is divided into three parts, one for *Zaiton* [Changchow] and *Cathay*, the other by the sea of India for Ormuz, Jidda, and Mecca, and the third northwards by the *Sea of Cathay*. In this island according to the testimony of those who sail this sea, the Antarctic Pole star is seen elevated at the height of *un brazo* [?].

Giava Major is said to be especially associated with *Cathay*:

> *Giava Major*, a very noble island, placed in the east in the furthest part of the world in the direction of *Cin*, belonging to *Cathay*, and of the gulf or port of *Zaiton*, is 3,000 miles in circumference and has 1,111 kingdoms; the people are idolatrous, sorcerers, and evil. But the island is all delightful and very fertile, producing many things such as gold in great quantities, aloes wood, spices, and other marvels. And from the *Cavo del ver* southwards there is a port called *Randan*, fine, large, and safe: in the vicinity is the very noble city *Giava*, of which many wonders are told.

The islands south of *Giava minor* doubtless represent the Moluccas, as on the 1457 *Genoese* map *(#248).* There is one tantalizing point: just to the north of *Giava Major* is a small island labeled *isola de Zimpagu*. Could this be *Cipangu* [Japan] and thus be the first appearance of the name on a map? It is certainly far from its correct position, but, as the cartographer has had to omit many islands for lack of room and doubtless pressed others together, this name may easily have been misplaced. If *Giava Major* is not Java, but another island closer to *Zaiton*, the possibility is greater. All of this information on the spice islands and their trade is taken from both a document by, and conversations with Niccolo de Conti, a Venetian merchant who visited the East from 1419 to 1444. Additionally from Conti there are the cities Mauro places in Burma, i.e., *Perhe* [the correct Burmese form], *Pochang* [Pagan, the ancient capital] and *Moquan* [Mogoung]; and in the upper course of the Irrawaddy there is a note testifying to knowledge of commercial routes: *Here goods are transferred from river to river, and so go on into Cathay.*



Fra Mauro mappamundi detail: India and Taprobana

For the representation of China, a great deal has been extracted from Marco Polo's narrative, as for the *Catalan Atlas (#235).* Fra Mauro's delineation, however, differs from that of the latter in two respects: the coast of China is broken by several long and narrow gulfs, which upon inspection are seen to be merely over-emphasized estuaries or important ports such as *Zaiton*. Of more interest is the improved hydrographic system. Instead of the rivers radiating from a point near *Chambalech [Beijing],* the two principal rivers are shown with some approach to reality. The upper course of the *Quiam* [the Yangtse Kiang], *the greatest river in the world*, is brought too far south; but the *Hwang ho* has its great upper bend clearly drawn. (There is no question, of course, of these rivers being drawn 'true to scale'.)

The towns, and the numerous annotations, are taken directly it would appear, from Polo's narrative. Most of those, for instance, which occur in his itinerary from *Chambalech* to *Zaiton*, are to be found on the map, though in no very comprehensible order, often accompanied by a drawing of a feature mentioned by Polo, or his comments, e.g., on the gold and silk of this city, or the porcelain of that; the sugar for which this district is noted or the gigantic reeds which grow in another.

Xandu is Polo's *Chandu*, the 'city of peace' of Kublai, and Coleridge's *Xanadu*. The mythical figures of *Gog* and *Magog* are represented behind *Alexander's Wall* in northeast Asia and *Termes* [Sarmatia] is shown as a town near *Bokhara*, on the Amu Dorya *[Iaxartes]*. Mauro displays a critical spirit when he inserts in the northeast of Asia, near

the enclosed tribes *I do not think it possible for Alexander to have reached so far* and expresses his doubts about these mountains being the Caspian range (this piece of Alexandrian romance was a common feature on many *mappamundi* from medieval Europe, see *Book II: #207, #210, #223, #224, #226*).

With respect to the infamous *Gog* and *Magog*, Fra Mauro provides the following long legend on his map.

> Some write that on the slopes of Mount Caspian, or not far from there, live those peoples who, as one reads, were shut in by Alexander the Macedonian. But this opinion is certainly and clearly mistaken and cannot be upheld in any way because the diversity of the peoples who live around that mountain would certainly have been noticed; it is not possible that such a large number of peoples should remain unknown given that these regions are fairly well known to us: they have been frequented not only by our own peoples but also by the likes of the Georgians, the Mingrelians, the Armenians, the Circassians, the Tartars and many other populations that continually travel along this route. Hence, if those peoples had been enclosed there, I think that others would have had notice of it, and the fact would be known to us. But given that those peoples are at the limit of the earth - something of which I have information that is certain - this explains why all the peoples I listed above know no more about them than we do. Hence I conclude that these peoples are very far from Mount Caspian and are, as I said, at the extreme limit of the world, between the north-east and the north, and they are enclosed by craggy mountains and ocean on three sides. They are to the north of the kingdom of Tenduch and are called the Ung and the Mongul, which people know as Gog and Magog and believe that they will emerge at the time of the Antichrist. But certainly this mistake is due to the way some force the Sacred Scriptures to mean what they want them to mean. So, I am not differing here from the authority of St. Augustine, who in his *De Civitate Dei* rejects all the opinions of those who claim that Gog and Magog are the peoples that will support the Antichrist. And Nicholas of Lyra agrees with this claim, explaining the two names by their Hebrew origin. But elsewhere one can speak more fully of this matter and of how it is to be understood.

Here Fra Mauro is opposing the literary and cartographical tradition that took *Mount Caspian* [the Caucasus mountains] as defining the territories occupied by the eastern-most populations of the world - in particular, such legendary figures as the giants *Gog and Magog*, whom Alexander the Great was said to have enclosed within the valley of the Eurus. Fra Mauro states that these regions are inhabited and travelled by numerous well-known peoples, and that if there were such extraordinary figures in the area of the Caucasus then we would certainly have heard of it. He then continues that the less well-known peoples must necessarily be located in the more distant regions, which are bound on three sides by high mountains and on the fourth by the ocean - hence at a great distance from *Mount Caspian*. Taking up information given by Marco Polo, he says such peoples are those of the kingdom of Tenduch and surrounding territories, which are inhabited by the legendary *Gog* and *Magog*. However, for himself, Fra Mauro says that he does not believe in the real existence of these figures because the biblical tradition on which such belief is based results from a misreading of the relevant passage from the *Book of Revelations* (20, 7-9): "And when the thousand years are expired, Satan shall be loosed out of his prison, And shall go out to deceive the nations which are in the four quarters of the earth, Gog and Magog, to gather them together to battle: the number of whom is as the sand of the sea. And they went up on the breadth of the earth, and compassed the camp of the saints about, and the beloved city". He follows the

interpretation given by St. Augustine in *De Civitate Dei*: "For these nations which he names *Gog* and *Magog* are not to be understood of some barbarous nations in some part of the world, whether the Getae and Massagetae, as some conclude from the initial letters, or some other foreign nations not under the Roman government. For John marks that they are spread over the whole earth, when he says, 'The nations which are in the four corners of the earth,' and he added that these are *Gog* and *Magog*", and by Nicholas of Lyra in his *Postillae sive Commentaria brevia in omnia Biblia*.

In the western regions, the picture is confused owing again to the inadequate space allotted to them. Fra Mauro seems to have been interested in Persia and Mesopotamia and to have drawn maps of these countries before beginning his world map. This may explain why they figure so conspicuously on the latter, at the expense of the features of eastern Asia. Thus the location of *L. Insicol* [Issik Kul], approximately in its correct relative position on the *Catalan Atlas* nearly a century earlier, is shown almost neighboring on *Chambalech*; and other places, *Armalec* and *Hamil*, for instance, have been similarly displaced. As on the *Catalan Atlas*, the kingdom of *Tenduc* has been relegated to the north, in proximity to the 'enclosed tribes'. On the whole, however, a fair knowledge of China is displayed; the mid-19th century certainly knew less of the interior of Central Africa than 15th century Europe did of the interior of China.

With respect to Central Asia, Fra Mauro provides the following map legend.

> Some write that Sithia extends on the near and far side of Mount Imao. But certainly if they had seen with their own eyes, they would have laid it out differently and enlarged its borders, because one can say that within Sithia are most of the peoples who live between the North-East and the East, between the North-East and the North. These peoples are innumerable and their kingdoms and empires of great power. I do not think, however, that the Ancients were in a position to judge their names appropriately, as their interpreters made many errors in reporting them. That is why I am not very convinced that one can find the real names: it is not possible to establish agreement between such a variety of languages, which change and confuse names in accordance with their own idioms. These names are now necessarily changed and in corrupt form due to the variety of languages, the long time that has passed and the errors made by copyists.

These *alguni* [some] mentioned by Fra Mauro include, first and foremost, Ptolemy himself. The Alexandrine's description and depiction of Central Asia showed *Mount Imaus* - the Himalayan range, in the widest sense of the term - in the center, with the territories of *Scythia intra Imaum* to the west, *Scythia extra Imaum* to the east. In fact, Fra Mauro underlines, the name of *Scythia* applies to a much larger territory, which is inhabited by innumerable different peoples. The names for these populations are, however, not very useful because they change from language to language, from period to period and from interpreter to interpreter - as well as being subject to the mistakes made by copyists. Such a note reveals Fra Mauro's sharp awareness of problems relating to the communication - and communicability - of knowledge from one period to another or from one culture to another. It is worth underlining that it is the very logic of 'modern' cartography within which Fra Mauro is working that requires him to consult and compare sources, and thus develop a critical approach that was certainly not the norm in the *mappaemundi* produced before this date. This passage is also very clear on the importance of knowledge regarding the transformation of toponyms if one is to preserve and transmit correct geographical information; such an awareness would only

find full expression more than a century later, when Giacomo Gastaldi drew up his concordance tables of place-names for his editions of Ptolemy and his three large maps of the different areas of the world.

EUROPE: Of particular interest here is Mauro's delineation of the extreme northern regions. A legend on the map refers to the shipwreck of the Venetian Pietro Querini on the Norwegian coast in 1431, and it has been suggested that Fra Mauro obtained oral information on Scandinavia from Querini himself (Querini spent some time in the Scandinavian region and wrote an account of his travels through this area). *Isola Islandia* is the name Mauro uses for the island of *Sjaelland*, representing Denmark. But the map cuts off a part of Iceland by its incorrigible terminal circle. A legend describing Norway reads:

> Norvegia is a very vast province surrounded by the sea and joined to Svetia. Here they produce no wine or oil, and the people are strong, robust and of great stature. Similarly, in Svetia the men are very fierce; and according to some, Julius Caesar was not eager to face them in battle. Similarly, these peoples were a great affliction to Europe; and at the time of Alexander, the Greeks did not have the courage to subjugate them. But now they are much diminished and do not have the reputation they formerly had. Here is said to be the body of St. Bridgit, who some say was from Svetia. And it is also said there are many new kinds of animals, especially huge white bears and other savage animals.

This note brings together information gleaned from various writers, including Paolo Diacono, Pietro Querini, etc. The end reference is to St. Bridget of Sweden, the most venerated saint of Scandinavia, who died in 1373. Founder of the Brigittines (*Ordo Sanctissimi Salvatoris*) at Vasteras, she visited Rome and her *Revelationes* would be read widely throughout Europe.

Two legends on the map describing Britain read:

> Note that in ancient times Anglia was inhabited by giants, but some Trojans who had survived the slaughter of Troy came to this island, fought its inhabitants and defeated them; after their prince, Brutus, it was named Britannia. But later the Saxons and the Germans conquered it, and after one of their queens, Angela, called it Anglia. And these peoples were converted to the Faith by means of St. Gregory the pope, who sent them a bishop called Augustine.

> As it is shown, Scotia appears contiguous to Anglia, but in its southern part it is divided from it by water and mountains. The people are of easy morals and are fierce and cruel against their enemies; and they prefer death to servitude. The island is very fertile in pastures, rivers, springs and animals and all other things; and it is like Anglia.

The tradition in nautical cartography was often to depict Scotland as separated from England by water - perhaps a simple river; it is this error that Fra Mauro refers to in his note. Such a division of the two was obviously a hang over from the Roman defenses *(Hadrian's Wall)* that had separated the two nations; it is clearly represented, for example, in the *Tabula Peutingeriana (Book I, #120)*.

Also shown on the map is *Grolanda*. The name, which also appears in this very form in the report of the Zeno brothers (which was, however, only published in the middle of the 16th century), is certainly an indication of the time when Greenland was

under the control of the kings of Norway. In fact, the large island was first colonized around the year 1000, but passed under the political control of Norway in 1261.

Fra Mauro's depiction of the Baltic-Russian regions is much richer and more innovative than that one finds in his contemporaries. Though there are a number of imaginary, or, one might say, conjectural elements in this area of the map, and as observed by Leo Bagrow, it cannot be denied that "one is surprised at the wide scope of knowledge Fra Mauro possessed because his picture is unprecedented and would remain so for a considerable period of time".

Fra Mauro goes against contemporary opinion in the following map legend in saying that the river Don (*Thanai*) arises not in the Riphei Mountains, as Ptolemy claims, but in the heart of Russia. He then describes its course, saying it runs to within 20 miles of the Volga (in effect, the distance between the two rivers at Volgograd is 25 miles) and then flows into the Sea of Azov (*Palude Meotida*). He also underlines how trustworthy his information is by stating that he had obtained it from *persone degnissime che hano veduto ad ochio* [persons most worthy of credit, who have seen with their own eyes]. In conclusion - and again contrary to current opinion he then states that for three reasons the Don cannot mark the division between Asia and Europe: first, this would cut off a part of the continent of Europe; secondly, the river's inclined 'V' form is a *storta forma* [twisted shape]; and thirdly because the river does not arise in the Riphei Mountains but much further south.

> The river Thanai arises in Russia and not in the Riphei mountains but very far from them. It flows southeast holding close to the river Edil, which is about 20 miles away. Then, at Belciman, it turns and runs almost southwest into the Sea of Abache - that is, the Meotide Marshes. And anyone who wants to contradict this should know that I have this from very worthy persons who have seen with their own eyes. Thus one could say that this river does not mark a very good division between Europe and Asia. Firstly, because it would cut off a large part of Europe; secondly, because of its twisting form, which is like a series of five Vs; and thirdly, because it does not arise where it is written that it does.
>
> The Caspian Mountains shown above start at the Sea of Pontus and extend eastwards as far as the Sea of Hycanus, which is also called the Caspian because [sic] near those coasts there are the Gates of Iron, which are named thus because they are impregnable. It is through them that one has to pass if one wants to go through these mountains, which are very high, extend in depth for the distance of twenty days' travelling, and spread for many more days in length. In these mountains there are 30 peoples of different language and faith. They live up in the mountains, where the inhabitants - or, at least, most of them - work iron and make weapons and all that is necessary for the military art. Let it not seem strange that I have shown the mountains as both the Caspian and the Caucasus, because those who live there claim this is a single chain of mountains, which changes name because of the diversity of languages of the people who live up there. But to satisfy cosmographers I will in due place make a long note on this name. One could say other things on these mountains, if there was space to write them. [This inscription occurs along the final stretch of the river Don]

According to authorities such as Leo Bagrow, the over-abundance of detail in Fra Mauro's map is a blemish, since the important and accurately drawn geographical features are inextricably mixed with superficial data based upon hearsay. But if one examines the map closely, disregarding superfluous details, one cannot but marvel at the extent of Fra Mauro's knowledge as demonstrated in his long notes describing

remote areas and his propensity for including contemporary information. Fra Mauro's map, along with the Martin Behaim globe of 1492 *(#258)*, form the transition in cartography between medieval thought and that of the great age of discovery. Some authorities believe that access to this map, plus the reports of the explorer Diaz, provided the prototype for the last large European world map before the discovery of the New World - the *Martellus* map of 1490 *(#256).*

According to Angelo Cattaneo "Fra Mauro's *mappamundi* is among the most relevant compendia of knowledge of the Earth and the Cosmos of the 15th century. The composite networks of contemporary knowledge (scholasticism, humanism, monastic culture, as well as more technical skills such as marine cartography and mercantile practices) converge in the epistemological unity of the *imago mundi*".

The comparison between two of my favorite maps, Fra Mauro's *mappamundi* and the Korean *Kangnido* map *(#236)* permits us also to reflect closely on the issue of the 15th century cosmographic representation of Europe. Both documents are from the same period; they both looked at the world from a cosmographic point of view, yet from opposite sides; they share a similar understanding of the 15th century world in its general structure, although the relative proportions of the countries and continents are inverted, with Europe and Africa enlarged on the Venetian *mappamundi*, while China and especially Korea are very largely represented in the *Kangnido*. Both had Arabic sources. When we look at the representations of Europe on these two world maps, the idea of an imagined European superiority and dominion over the rest of the world disappears. A conceptualization and representation of Europe in both mid-15th century European culture and Korean-Chinese culture emerges from, and is also based upon, the existence of channels of communication and trade at a global level; the gathering of global information and the world circulation of knowledge and technology were a relevant part of the circulation of material culture from the 13th to the late 17th centuries between Europe and Asia. Alternate influences must have been absorbed through interaction along Asian routes of communication, such as the Silk Road and sea trade routes in the Indian Ocean, with the crucial intervening agency of Islamic traders.

This contribution will also present the romanization of the 210 or so toponyms written in Chinese, constituting the most ancient description of Europe existing on a map made in Asia.

The comparative study of Fra Mauro's *mappamundi* and the *Kangnido* clearly shows that it was absolutely not the case that technologies of space representation, control and trade were monopolized by the West; on the contrary, these documents, among many others, emphasize instead connections between several civilizations in the vast Eurasian continent within a multi-centric world: from the Mediterranean, to Persia, Africa, the Indian Ocean. In these 15th century documents, Europe therefore emerges as the result of global networks, encompassing trade and knowledge, with the intervening agencies of several cultures.

At first glance the circular form of Fra Mauro's *mappamundi*, the plentiful illustrations and the two thousand-odd inscriptions all around recall medieval world maps. But where they relied on tradition, in his inscriptions Fra Mauro questioned it, on the basis of his own observations, reports received from abroad and from his contacts with contemporary merchants, mariners and visitors to Venice. The map is oriented with south and not east at the top (though Jerusalem does receive an especially large vignette). The texts are in the Venetian dialect and not in Latin. There is no spiritual or cosmological framework around the map's circumference. The *Earthly Paradise*,

beautifully depicted by, perhaps, Leonardo Bellini, is exiled beyond the map to the bottom left where an inscription tries to establish its actual physical location. No monstrous races are depicted in Africa since, Fra Mauro tells us, none have ever been seen, with the exception of the Dog Heads *(Cynocephali)*. Indeed figures of any sort are missing though the map does depict cities, buildings, ships and fish.

The European coastlines are copied from *portolan* charts. The expanded depiction of Africa, showing Timbuktu and the rivers Senegal and Gambia, reveals knowledge of the ongoing Portuguese voyages which, with the help of Italian navigators (who had no scruples about passing on information to their compatriots in Venice), were rapidly revealing the true course of the African coast. Fra Mauro was one of the first mapmakers to make extensive use of the writings of Marco Polo and Niccolo de Conti for his portrayal of the Asian interior and the islands of the Indian Ocean. He also tried as far as he could, for instance in his depiction of India which was not to be reached by the Portuguese until 1498, to include information from Claudius Ptolemy's *Geographia*. However, as Fra Mauro noted, modern discoveries had shown some of Ptolemy's information to be incorrect and had uncovered important places completely unknown to him.

Though often acclaimed as representing the culmination of medieval mapmaking through its synthesis of the traditional, *portolan* and Ptolemaic, the Fra Mauro map in truth represents the first great map of a new tradition.

The most definitive discussion of this map, with translations of all of the place names, legends and notes is in Falchetta, P. *Fra Mauro's World Map with a Commentary and Translations of the Inscriptions*, Brebols, 2006, Terrarum Orbis + CD ROM.

LOCATION: Biblioteca Nazionale Marciana, Venice

SIZE: 196 x 193 cm

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SHIPS OF THE WORLD IN 1460 (FRA MAURO MAP)
CHINESE JUNKS
ARABIAN SHIPS
EUROPEAN SHIPS
INDIAN SHIPS



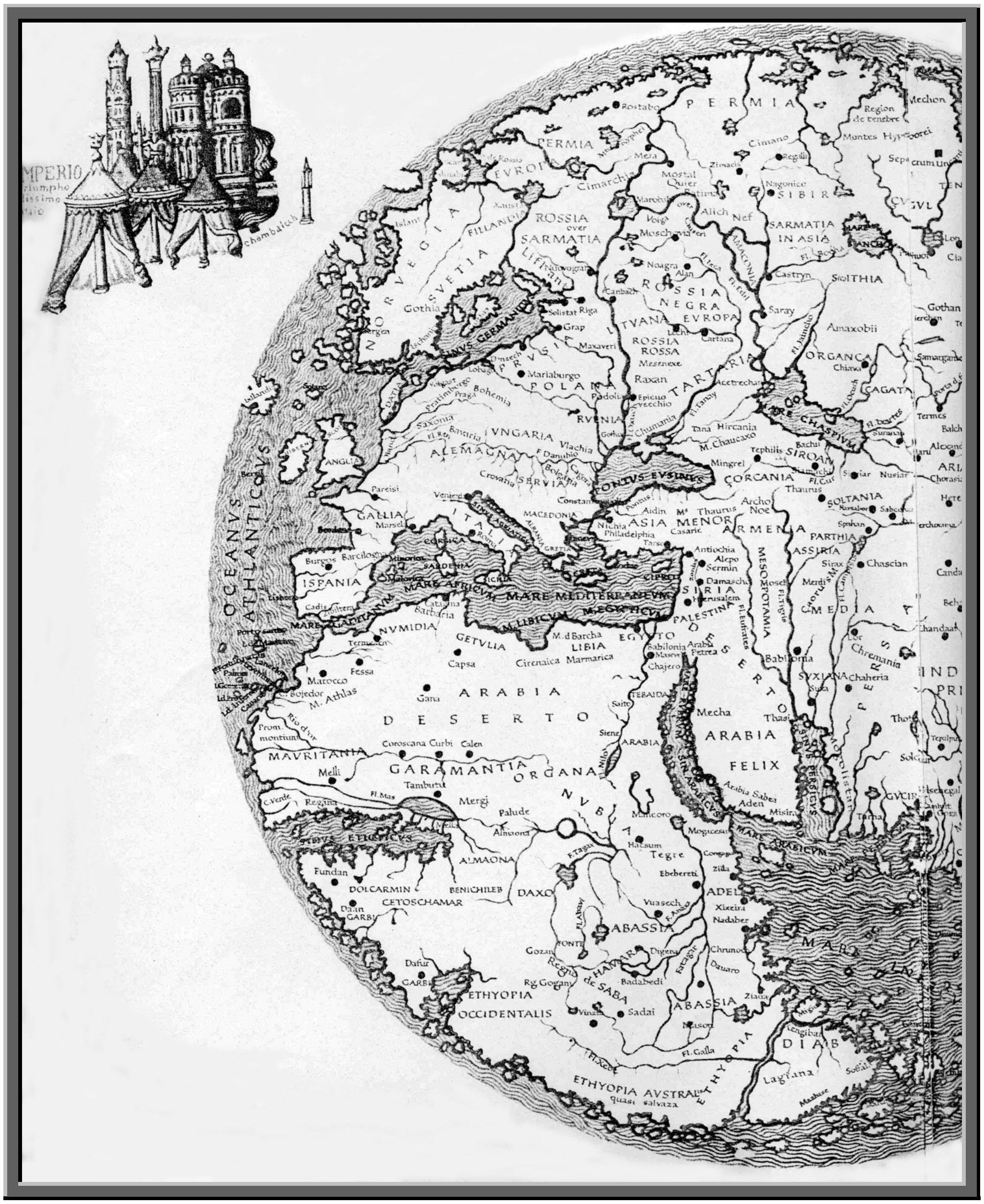
Fra Mauro's Mappamundi, 1459
(oriented with South at the top)
190.5 cm diameter

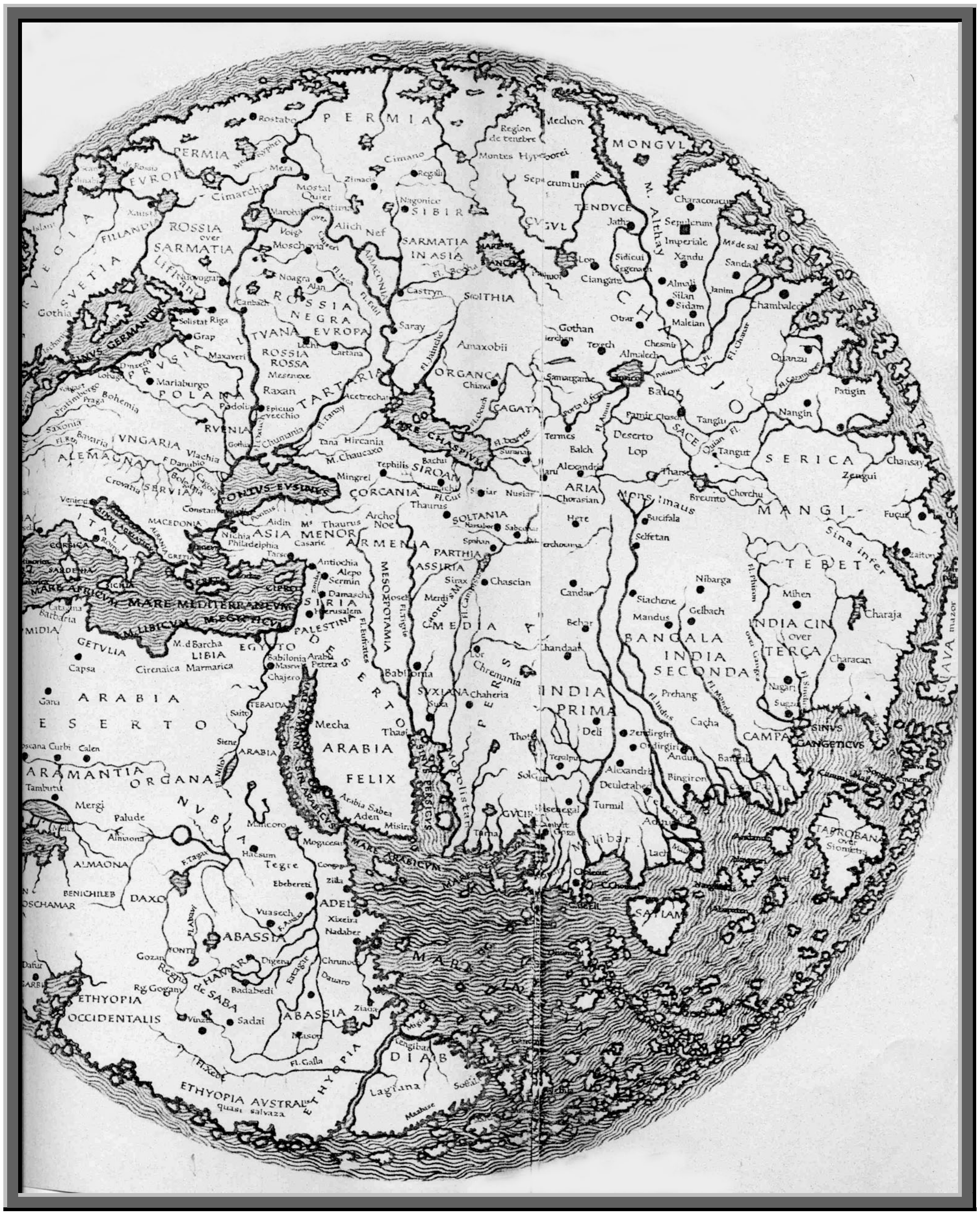


Copy of the Fra Mauro Mappamundi by William Frazer: London and Venice, 1804
Manuscript on vellum: BL Add. MS 11267

#249


IMPERIO
PERMIA
ROSSIA
SARMATIA
SIBIR
MONGVL
OCEANVS ATHLANTICVS
YNGARIA
ALEMAGNA
ISPANIA
GALLIA
MARE MEDITERRANEVM
ASIA MENOR
ARMENIA
SIRIA
PALESTINA
EGYPTO
LIBIA
NVMIDIA
GETVLIA
ARABIA
DESERTO
MAVRITANIA
GARAMANTIA
ORGANA
NVBIA
ABASSIA
ARABIA FELIX
INDIA PRIMA
BANGALA
INDIA SECONDA
MANGI
SERICA
TEBET
ETHYOPIA OCCIDENTALIS
ETHYOPIA AVSTRAL
MARE


PERMIA
SIBIR
SARMATIA IN ASIA
ROSSIA over SARMATIA
NORVEGIA
SVETIA
ROSSIA NEGRA
EVROPA
POLANA
TARTARIA
MARE CHASPIVM
IVNGARIA
ALEMAGNA
PONTVS EVSINVS
ÇORCANIA
ASIA MENOR
ARMENIA
GALLIA
ITALIA
ISPANIA
MARE MEDITERRANEVM
MESOPOTAMIA
SIRIA
PALESTINA
OCEANVS ATHLANTICVS
NVMIDIA
GETVLIA
LIBIA
EGYPTO
ARABIA DESERTO
ARABIA FELIX
MAVRITANIA
GARAMANTIA
ORGANA
NVBIA
ABASSIA
ETHYOPIA OCCIDENTALIS
ETHYOPIA AVSTRAL
MARE ARABICVM


PERMIA
ROSSIA
SARMATIA
SVETIA
SIBIR
SARMATIA IN ASIA
SCITHIA
ROSSIA NEGRA
EVROPA
POLAN
Bohemia
VNGARIA
ALEMAGNA
TARTARIA
MONGVL
CHATAIO
TENDVCE
Amaxobii
ORGANCA
CAGATAI
Deserto Lop
SERICA
MANGI
TEBET
INDIA CIN over TERÇA
BANGALA
INDIA SECONDA
INDIA PRIMA
ARIA
SOLTANIA
ARMENIA
PARTHIA
ASSIRIA
MEDIA
MESOPOTAMIA
ASIA MENOR
SIRIA
PALESTINA
EGYPTO
LIBIA
ARABIA
DESERTO
ARAMANTIA
ORGANA
NVBIA
ARABIA FELIX
Mecha
ABASSIA
ETHYOPIA OCCIDENTALIS
ETHYOPIA AVSTRAL quasi salvaza
ETHYOPIA
DIAB
MARE ARABICVM
MARE MEDITERRANEVM
PONTVS EVSINVS
MARE CHASPIVM
SINVS GANGETICVS
TAPROBANA over Siometra
SAYLAM
Malibar
GETVLIA
Capsa
Cirenaica
Marmarica
Babilonia
Damascho
Antiochia
Alepo
Jerusalem
Babilonia
Tigris
Deli
Candar
Balch
Termes
Samarcant
Saray
Castryn
Tana
Mingrel
Tephilis
CORCANIA
SIROAN
Thaurus
Aden
Tegre
Zilla
ADEL
Xixeira
Nadabes
Chrunvo
Davaro
Sadai
Lagfana
FLSaba
Mergi
ALMAONA
BENICHILEB
DAXO
Gozan
Regno de SABA
Badabedi
Rg. Gogan
Vuasech
Fl. Galla
Stene
Chajero
Petrea
Nagin
Tangut
Zengui
Fuçur
Characan
Charaja
Cacha
Prehang
CAMPA
Bingiron
Turmul
Deuletabet
Alexandri
Sina infer
Nibarga
Mihen
Gelbach
Siachene
Mandus
Pamir
Balor
Tangu
Chambalech
Sanda
Xandu
Imperiale
Almalech
Otrar
Chesmir
Gothan
Hercuno
Mechon
Montes Hyperborei
Region de tenebre
Cimano
Rostabo
FILLANDIA
Gothia
Riga
Grap
Mariaburgo
Bavaria
Vlachia
Crovatia
SERVIA
Constan
MACEDONIA
CORSICA
SARDENIA
MARE AFRICVM
M. LIBICVM
Nichia
Philadelphia
Cesarie
Tharsus
Capha
Moscho
Rexan
Podolia
RVENIA
M. Chaucaso
Hircania
Tambutu
Palude
Almaona
Calen
Tebaida
Sait
Thaer
Zenda
Nisabur
Tarna
Sciraz
Chascian
Sirax
Hore
Chorasian
Alexandria
Bucifala
Selfetan
Sabucar
Spahan
Narikur
Fl. Eufrates
Mogacesa
Misin
Arabia Sabea
Meticoro
Hacsum
Ebeberti
Ziach
Nasor
Fl. Nilus
Fl. Ganges
Fl. Indus



*Pietro Vesconte World Map, ca. 1321**



*Andrea Bianco World Map, 1436**



*Giovanni Leardo World Map, 1452-53**



The Catalan-Estense Map, ca. 1450



*Fra Mauro's World Map, 1459***


CHATAIO
IMPERIO
SEPULTURA IMPERIAL
ROSSIA BIANCHA
ASIA
El mar BLANCO
PERMIA
BRUCHEM
SEPTEM
TRION

ASIA


CHATAIO
IMPERIO
REGNO
CHATAIO
SEPULTURA IMPERIAL
CRIEGO



Paradise



Europe/Prussia/Norway



Europe



North Africa

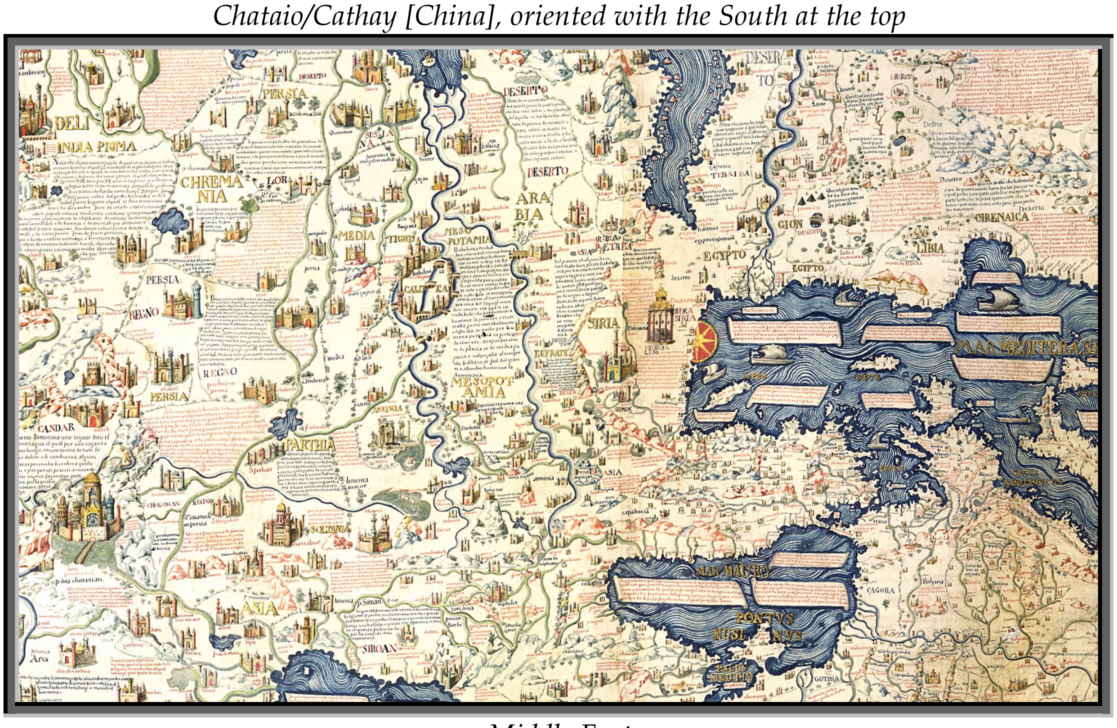


Africa (oriented with South at the top)





Chataio/Cathay [China], oriented with the South at the top



Middle East



India, Saylam, Persian Gulf (large city is Deli - below)



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Indian Ocean
TAPROBANA
SUMATRA
ETHIOPIA
AFRICA
Ethiopian Gulf
ARABIA
PERSIA
Persian Gulf
Red Sea
Nile
Gihon
Desert
LYBIA
MOROCCO
INDIA
Ganges
Pishon
JAVA
MEDIA
MESOPOTAMIA
Tigris
Euphrates
Jerusalem
Mediterranean Sea
SPAIN
CHINA
PERSIA
ASIA MINOR
MACEDONIA
EUROPE
PRUSSIA
ENGLAND
ASIA
Caspian Sea
TARTARIA
German Ocean
NORWAY
SCYTHIA
CATHAY
FINNLAND
S
Ocean
EARTHLY PARADISE
Single Source
INHABITED EARTH
Ocean
Four Rivers


Alt. piedi parig. 5, poll. 11, lin. 7.
Larg. pied. 6, lin. 7.
ABBOZZO DEL MAPPAMONDO DI F. MAURO CAMALDOLESE
Cosmografo Incomparabile alla Metà del Sec. XV.
GIA' ESISTENTE NELLA BIBLIOTECA DI S. MICHELE DI MURANO ORA NELLA MARCIANA

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